# Antiretrovirals Not Likely the Cause of Developmental Problems in HIV-Exposed Kids

Researchers argue that among children born to mothers with HIV, other factors such as the virus and substance use prompt such outcomes.

September 13, 2018 By Benjamin Ryan

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The excess diagnosis of developmental delays among HIV-negative children born to mothers with HIV may not be exposure to antiretrovirals (ARVs) during gestation but rather the virus itself as well as the mother's smoking or substance use during pregnancy, aidsmap reports.

Meanwhile, a recent review of scientific literature found that some ARVs are associated with preterm birth and low birth weight. Additionally, recent research indicated that Tivicay (dolutegravir), when taken during conception or the first trimester of pregnancy, was associated with birth defects.

Publishing their findings in the journal AIDS, researchers in the new analysis analyzed data from a British Columbia health database on a cohort of 446 HIV-negative children born to HIV-positive mothers in the Canadian province between 1990 and 2012. They compared this group with 1,323 children born to HIV-negative mothers, matching them according to age, sex and postal code.

The researchers had data on drug use among the mothers covering 2000 to 2012.

Thirty percent of the HIV-exposed children and 13.4 percent of the control group had at least one neurodevelopmental disorder, meaning that the former group was 2.78 times more likely to have such a disorder compared with the latter group.

The study authors narrowed their analysis to focus on the 309 HIV-exposed children and 917 HIV-unexposed children born to children about whom there were data on their mothers' substance use during pregnancy. They found that the respective rate of smoking among their mothers was 34.6 percent and 8.5 percent in the HIV-exposed and HIV-unexposed groups, while respective alcohol use was 8.4 percent and 1.3 percent, and respective drug use was 35.9 percent and 2.6 percent.

After adjusting the data for various factors, the researchers found that compared with the HIV-unexposed children, the HIV-exposed children were 1.67-fold more likely to have a

neurodevelopmental disorder. The increased risk factor was 4.47-fold among children 6 years old and older and 1.98-fold among boys. Looking at all the children, the researchers found that if a mother smoked or used substances during pregnancy, this behavior was associated with a 1.75-fold increased risk of a developmental disorder.

Eighty-three percent of the HIV-exposed children had been exposed to ARVs during gestation. Compared with those children not exposed to ARVs, those exposed to the medications had a 2.04-fold increased risk of a neurodevelopmental disorder. After the researchers controlled for mothers' substance use, however, they found that ARVs were no longer associated with neurodevelopmental disorders. The exception to this finding was if mothers took regimens based on boosted protease inhibitors, in which case such exposure was actually associated with an 85 percent reduced risk of neurodevelopmental disorders.

The study authors concluded: "These findings highlight a need for holistic support for pregnant women as well as careful developmental monitoring of [HIV-negative children exposed to HIV during gestation] past infancy, and access to early interventions, particularly among those born preterm and those exposed to addictive substances."

To read the aidsmap article, click here.

To read the study abstract, click here.

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